WATER SUPPLY OUTLOOK

KOOTENAI RIVER BASIN

MONTANA

AS OF:

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply during the next five months in the Kootenai River drainage is expected to be about 30 percent below the 1943-57 average and about 15 percent less than last year.

Snow surveys made near the first of May in Canada and Montana indicate the water stored in the mountain snow pack is 92 percent of last year and 72 percent average.

Report Prepared By:

P. E. Farnes
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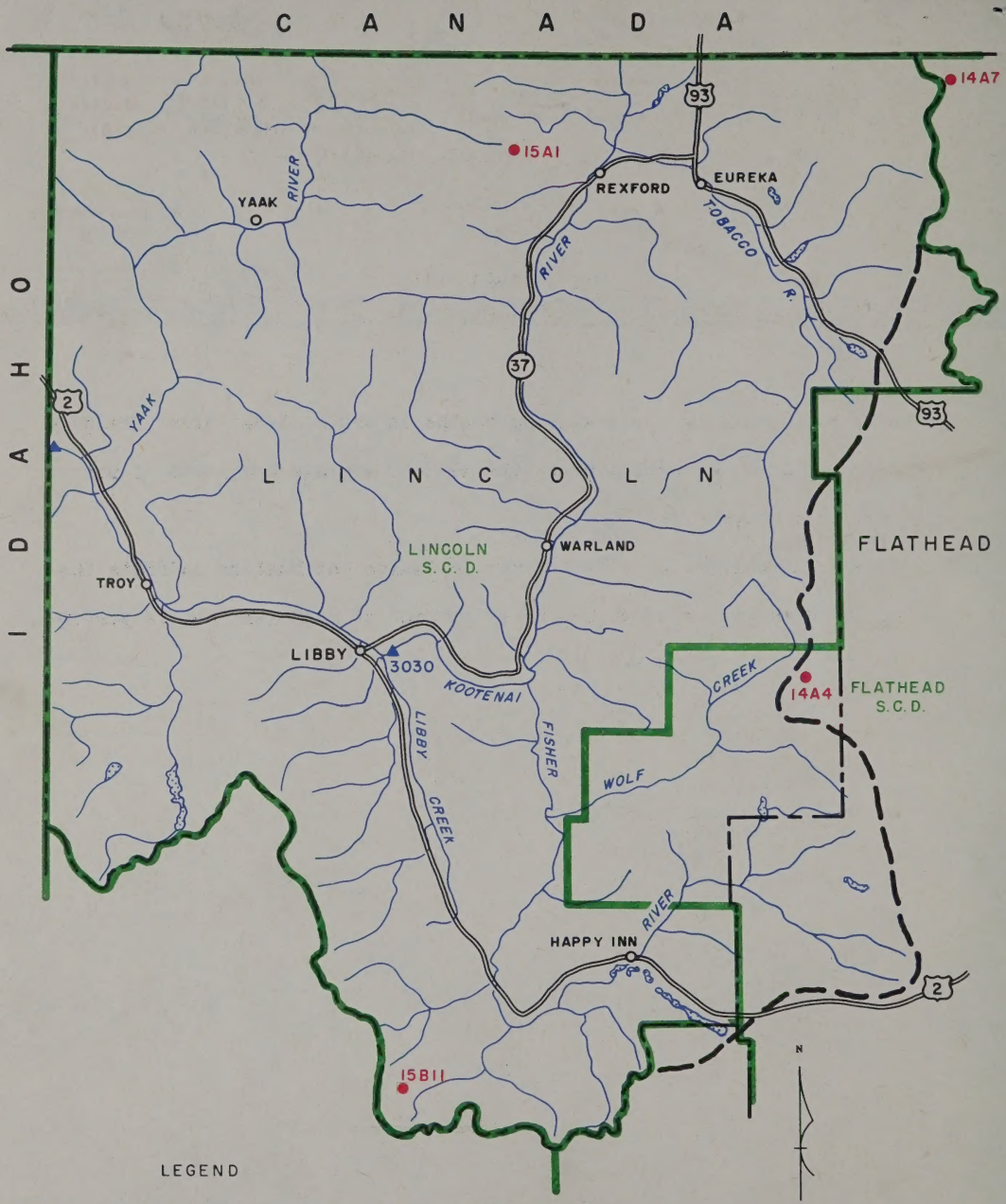
Soil Conservation Service
Box 855, Bozeman, Montana

Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,507.1



USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,507.2

WATER SUPPLY FORECASTS

WATERSHED I

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
	KOOTENAI RIVER					
3030	Libby (at)	May-Sept	4900	70	5799	7053
		May-July	4100	68	4874	6024
3050	Leonia (at)	May-Sept	5460	68	6531	7994
		May-July	4600	67	5529	6903

* PROVISIONAL DATA FURNISHED BY U.S. GEOLOGICAL SURVEY

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD).

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
15B11	Baree Creek	5500	5/1	72	31.4	41.8	48.2*
14A4	Brush Creek	5000	4/26	21	8.2	8.4	10.5*
Can. 10	Fernie	3500	5/2	0	0.0	0.0	2.7*
Can. 12A	Field	4200	4/29	0	0.0	0.0	0.8*
Can. 43	Gray Creek	5100	4/28	46	15.7	17.5	20.4*
Can. 33	Kicking Horse	5400	4/30	33	11.3	11.1	11.8*
Can. 20B	Kimberley	3800				0.0	1.5*
Can. 32	Marble Canyon	5000	5/1	27	7.9	9.0	13.5*
Can. 10B	Morrissey Ridge	6100	5/2	62	26.1	23.6	-
Can. 10A	New Fernie	4100	5/2	3	0.7	3.9	6.7*
15A1	Red Mountain	6000	4/30	40	14.2	14.4	19.7
Can. 8A	Sinclair Pass	4500	5/1	0	0.0	0.0	2.1*
Can. 20A	Sullivan Mine	5100	4/30	24	8.2	9.2	11.9*
Can. 41	Upper Elk River	4400	4/30	0	0.0	0.0	2.2*
14A7	Weasel Divide	5450	5/1	63	26.4	30.5	34.7*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

WATER SUPPLY OUTLOOK

FLATHEAD RIVER BASIN
MONTANA

AS OF: MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook for the next five months in the Flathead River drainage is fair to good.

Streamflow is forecast to be 10 to 25 percent below average and 5 to 20 percent less than last year.

Snow surveys made near the first of May show the water stored in the mountain snow pack is 83 percent of last year and 75 percent average.

Reservoir storage on the Flathead Irrigation Project is slightly less than a year ago and slightly less than average.

Report Prepared By:

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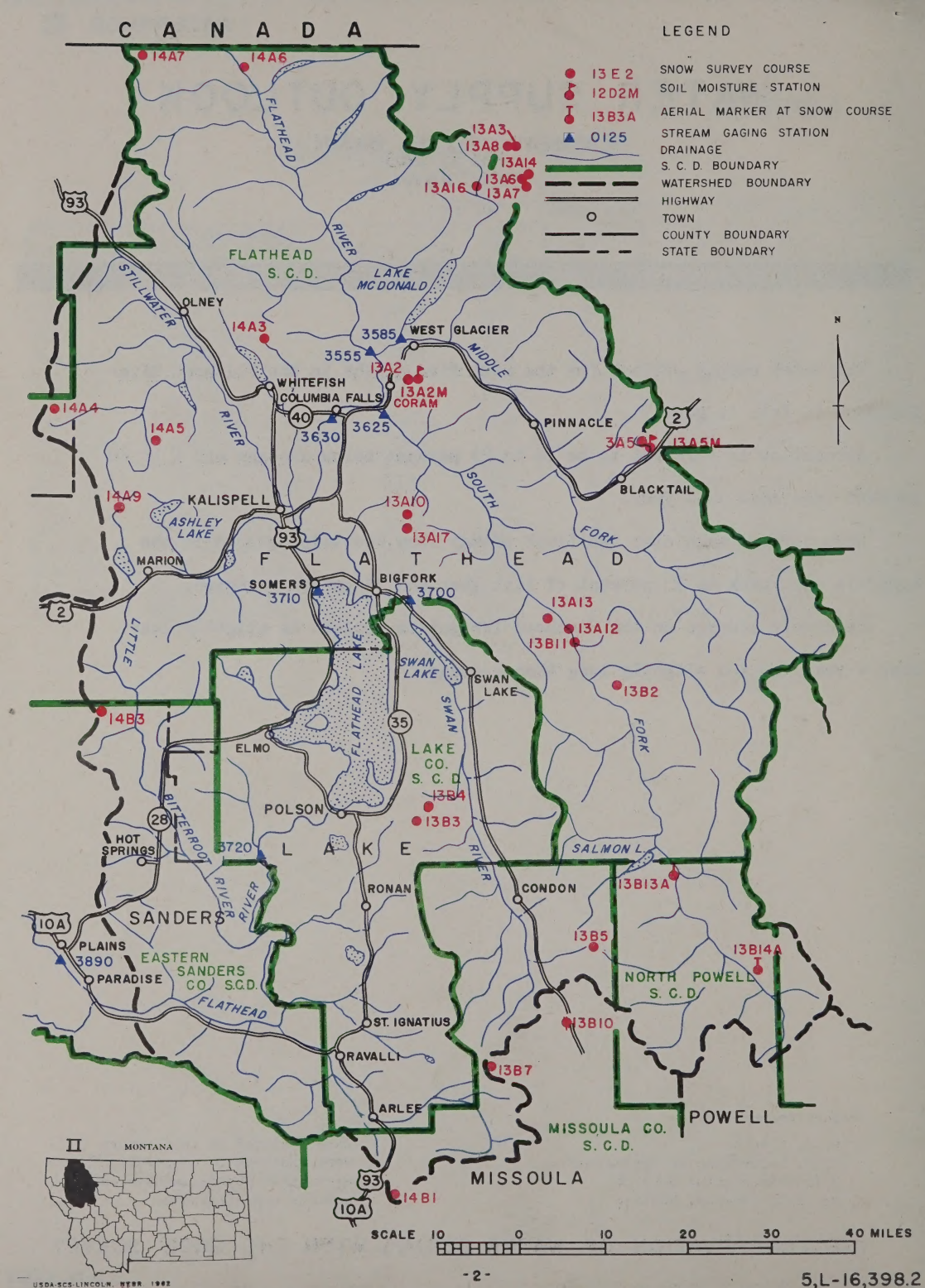
Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR.-1963

5,L-16,398.1


CANADA
LEGEND
13E2 SNOW SURVEY COURSE
12D2M SOIL MOISTURE STATION
13B3A AERIAL MARKER AT SNOW COURSE
0125 STREAM GAGING STATION
DRAINAGE
S. C. D. BOUNDARY
WATERSHED BOUNDARY
HIGHWAY
TOWN
COUNTY BOUNDARY
STATE BOUNDARY
14A7
14A6
FLATHEAD
13A3
13A8
13A14
13A6
13A16
13A7
93
RIVER
FLATHEAD S. C. D.
LAKE MC DONALD
STILLWATER
OLNEY
14A3
3585
WEST GLACIER
3555
13A2
MIDDLE
WHITEFISH
COLUMBIA FALLS
13A2M
CORAM
14A4
RIVER
14A5
40
3630
3625
PINNACLE
2
3A5
13A5M
SOUTH
FORK
BLACKTAIL
14A9
KALISPELL
13A10
ASHLEY LAKE
13A17
93
F L A T H E A D
MARION
SOMERS
3710
BIGFORK
3700
2
LITTLE
13A13
13A12
13B11
SWAN LAKE
SWAN LAKE
13B2
14B3
35
ELMO
FLATHEAD LAKE
SWAN
FORK
LAKE CO. S. C. D.
13B4
POLSON
13B3
28
BITTERROOT
HOT SPRINGS
3720
L A K E
SALMON L.
RIVER
RONAN
CONDON
13B13A
10A
SANDERS
RIVER
13B5
13B14A
PLAINS
3890
EASTERN SANDERS CO. S.C.D.
PARADISE
NORTH POWELL S. C. D.
FLATHEAD
ST. IGNATIUS
13B10
RAVALLI
13B7
ARLEE
MISSOULA CO. S. C. D.
POWELL
MISSOULA
93
14B1
10A
MONTANA
SCALE 10 0 10 20 30 40 MILES
USDA-SCS-LINCOLN, NEBR 1962

5,L-16,398.2

WATER SUPPLY FORECASTS

WATERSHED II

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	NORTH FORK FLATHEAD RIVER					
3555	Columbia Falls (near)	May-Sept	1250	72	1393	1749
		May-July	1135	72	1255	1576
		May-June	938	72	1072	1298
	MIDDLE FORK FLATHEAD RIVER					
3585	West Glacier (near)	May-Sept	1318	78	1415	1687
		May-July	1210	78	1296	1553
		May-June	1027	79	1116	1286
	SOUTH FORK FLATHEAD RIVER					
3625	Columbia Falls (nr)(17)	May-Sept	1750	87	1997	2015
		May-July	1652	87	1891	1897
		May-June	1401	87	1664	1617
	FLATHEAD RIVER					
3630	Columbia Falls (at)(17)	May-Sept	4431	79	4975	5608
		May-July	4127	80	4576	5155
		May-June	3440	80	3954	4302
3720	Polson (near)(18)	May-Sept	5220	79	5795	6605
		May-July	4850	80	5336	6081
		May-June	4035	80	4602	5039
	SWAN RIVER					
3700	Big Fork (near)	May-Sept	507	91	616	554
		May-July	436	91	537	479
		May-June	340	91	433	374

(17) Corrected for storage in Hungry Horse Reservoir.
(18) Corrected for storage in Hungry Horse Reservoir and Flathead Lake.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3620	Hungry Horse	3428.0	2535.0	2321.0	2048.0
3710	Flathead Lake	1791.0	966.5	1119.0	936.0
3757	Camas (4)	45.2	33.2	34.2	30.6
3800	Mission Valley (8)	100.3	38.2	41.2	46.8

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE NO.	NAME	ELEVATION	CURRENT DATA: DATE OF SURVEY	CURRENT DATA: SNOW DEPTH	CURRENT DATA: WATER CONTENT	PAST RECORD: WATER CONTENT: LAST YEAR	PAST RECORD: WATER CONTENT: AVERAGE
13B14A	Basin Creek	5000	4/24	0	0.0	0.0	1.8*
14B3	Bassoo Peak	5150	4/29	10	3.7	5.2	-
13B3	Big Creek	6750	5/2	108	47.9	49.0	48.4*
14A4	Brush Creek	5000	4/26	21	8.2	8.4	10.5*
13A17	Camp Misery	6400	4/30	96	40.5	44.6	-
13B10	Coyote Hill	4200	5/2	0	0.0	3.2	2.1*
13A2	Desert Mountain	5600	5/2	25	9.2	12.2	13.0
13B4	Fatty Creek	5500	5/2	46	18.4	18.6	-
Can. 10	Fernie	3500	5/2	0	0.0	0.0	2.7*
14A9	Griffin Creek Divide	5150	5/1	12	4.4	5.1	-
14A3	Hell Roaring Divide	5770	4/29	60	25.2	28.1	28.7
13B13A	Holbrook	4530	4/24	0	0.0	0.0	1.2*
13A3	Iceberg Lake #3	5600	5/1	54	23.6	22.8	27.1
13A14	Josephine Lower #9	4900	4/30	23	8.8	15.2	17.1*
14A5	Logan Creek	4300	4/26	7	2.4	2.0	2.7*
13A5	Marias Pass	5250	4/29	25	9.7	14.7	15.7
Can.10B	Morrissey Ridge	6100	5/2	62	26.1	23.6	-
13A7	Mount Allen #7	5700	4/30	84	34.8	40.4	47.3
Can 10A	New Fernie	4100	5/2	3	0.7	3.9	6.7*
13B7	North Fork Jocko	6330	5/3	92	39.2	48.8	44.7*
13A6	Piegan Pass #6	5500	4/30	66	28.4	34.7	38.4
13A8	Ptarmigan #8	5800	5/1	72	27.6	30.7	37.8
13B2	Spotted Bear Mountain	7000	4/24	21	7.6	7.6	12.6*
13A10	Strawberry Lake	6500	4/24	70	27.2	34.0	40.0*
13B1	Trinkus Lake	6500	4/24	87	33.7	43.6	41.4*
13A12	Trout Lake	3600	5/3	0	0.0	3.5	8.2*
14B1	T. V. Mountain	6800	4/28	47	19.4	17.8	21.0*
13B11	Twin Creeks	3580	5/3	0	0.0	0.0	0.8*
13B5	Upper Holland Lake	7000	4/24	74	28.0	37.8	36.8
14A7	Weasel Divide	5450	5/1	63	26.4	30.5	34.7*

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION NO.	NAME	ELEVATION	SOIL PROFILE: DEPTH	SOIL PROFILE: FIELD CAPACITY	CURRENT DATA: DATE OF SURVEY	CURRENT DATA: SOIL MOISTURE	PAST RECORD: LAST YEAR	PAST RECORD: **AVERAGE
13A2M	Desert Mountain	5600	54	8.4	5/2	8.9	8.9	8.3
13A5M	Marias Pass	5250	54	6.5	4/28	6.2	6.1	6.0

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

LOWER CLARK FORK RIVER BASIN

MONTANA

AS OF:

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook has improved somewhat during the past month. Precipitation during April and cool temperatures that have delayed the mountain snow melt have increased the snow pack at higher elevations.

Streamflow is forecast to be about 15 percent below average on the Clark Fork above Missoula, decreasing to about 25 percent below average near the Idaho border. Streams tributary to the main stem of the Clark Fork can be expected to produce less water than last year.

Snow surveys made near the first of May indicate the mountain snow pack is 80 percent of last year and 79 percent average. The pack is near average in the Missoula area, decreasing percentagewise in the west portion of the drainage.

Report Prepared By:

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Soil Conservation Service
Box 855, Bozeman, Montana

Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,506.1

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,506.2

WATER SUPPLY FORECASTS

WATERSHED III

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	BLACKFOOT RIVER					
3400	Bonner (near)	May-Sept	772	88	914	879
		May-July	687	88	816	783
		May-June	566	88	701	655
	BITTERROOT RIVER					
3528	Missoula (near)(16)	May-Sept	889	65	1212	1379
		May-July	830	65	1114	1272
		May-June	695	65	967	1066
	CLARK FORK RIVER					
3404	Milltown (above)(14)	May-Sept	583	83	622	698
		May-July	500	83	520	600
		May-June	410	83	442	492
[illegible]5	Missoula (above)	May-Sept	1355	86	1536	1577
		May-July	1187	86	1336	1383
		May-June	976	85	1143	1147
3530	Missoula (below)	May-Sept	2244	76	2748	2950
		May-July	2017	76	2450	2648
		May-June	1671	76	2110	2200
3545	St. Regis (at)	May-Sept	2892	73	3613	3948
		May-July	2581	73	3210	3540
		May-June	2160	73	2762	2950
3890	Plains (near)(18)	May-Sept	8360	77	9829	10837
		May-July	7594	77	8902	9816
		May-June	6294	77	7647	8125
3920	Whitehorse Rapids (at)(19)	May-Sept	9280	77	10803	12144
		May-July	8378	77	9723	10975
		May-June	6970	77	8325	9027

([illegible]) Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner.
(16) Difference in observed flow, Clark Fork above and below Missoula.
(18) Corrected for storage in Flathead Lake & Hungry Horse Reservoir.
(19) Corrected for storage in Flathead Lake, Hungry Horse and Noxon Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3913	Noxon	334.6	117.8	132.2	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
15B11	Baree Creek	5500	5/1	72	31.4	41.8	48.2*
14B3	Bassoo Peak	5150	4/29	10	3.7	5.2	-
13B10	Coyote Hill	4200	5/2	0	0.0	3.2	2.1*
15C1	Hoodoo Creek	6200	4/30	83	35.5	44.5	46.9*
14C5	Lolo Pass	5230	4/29	45	19.6	33.7	29.7*
15B2	Lookout	5250	4/29	62	25.2	30.8	34.0*
13C8	Lubrecht Forest #6	4040	5/1	0	0.0	0.0	0.1*
13B7	North Fork Jocko	6330	5/3	92	39.2	48.8	44.7*
13C1	Stuart Mountain	7400	4/27	73	31.4	30.0	30.1*
14B1	T. V. Mountain	6800	4/28	47	19.4	17.8	31.0*

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

WATER SUPPLY OUTLOOK

UPPER CLARK FORK RIVER BASIN

MONTANA

AS OF:

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook for the coming irrigation season has improved during the past month. Precipitation during April and cool temperatures that have delayed the mountain snow melt have increased the snow pack at higher elevations.

Early season irrigation water should be adequate, but some late season shortages may be expected if temperatures are above normal early in the summer months.

Streamflow forecasts vary from 83 to 91 percent average in the Upper Clark Fork drainage. Streamflow is expected to be less than last year on the Blackfoot drainage and about the same as last year on the headwater streams of the Clark Fork River.

Snow surveys made near the first of May indicate the mountain snow pack is 113 percent of last year and 115 percent of the 1943-57 average. These above-average percentages reflect the lack of snow melt at the higher elevations.

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Soil Conservation Service
Box 855, Bozeman, Montana

Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

5,L-16,396.1

MONTANA
IV
LEWIS & CLARK CO.
12B11
12B10
S. C. D.
LEWIS & CLARK
OVANDO
3385
LINCOLN
BLACKFOOT
RIVER
13C14M
13C8
NORTH
POWELL
S. C. D.
NEVADA
12C1
3355
CR.
POWELL
BONITA
BEARMOUTH
CLARK
DRUMMOND
CREEK
HALL
GOLD
CREEK
AVON
BLACKFOOT
ELLISTON
LITTLE
FORK
RIVER
13C16
13C2
GRANITE
MAXVILLE
3300
3295
CREEK
13C13
13C10
13C9
GARRISON
DEER
LODGE
VALLEY
S. C. D.
12C2
12C3
12C4
12C5
GRANITE
S. C. D.
DEER LODGE
PHILLIPSBURG
FLINT
ROCK
13C3
13C12
13C11
13C4
13C15M
13C5
3320
DEER LODGE
WARMSPRINGS
13C6
ANACONDA
13C7
BUTTE
MILE
HIGH
S. C. D.
SILVER
BOW
12D1
LEGEND
13 E 2
SNOW SURVEY COURSE
12D2M
SOIL MOISTURE STATION
13B3A
AERIAL MARKER AT SNOW COURSE
0125
STREAM GAGING STATION
DRAINAGE
S. C. D. BOUNDARY
WATERSHED BOUNDARY
HIGHWAY
TOWN
COUNTY BOUNDARY
STATE BOUNDARY
SCALE 10 0 10 20 MILES
USDA-SCS LINCOLN NEBR 1962
5,L-16,396.2

WATER SUPPLY FORECASTS

WATERSHED IV

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	FLINT CREEK					
3295	Maxville (at)	May-Sept	35.0	91	32.0	38.7
		May-July	25.0	91	20.6	27.6
	BOULDER CREEK					
3300	Maxville (at)	May-Sept	22.2	84	22.6	26.4
		May-July	20.1	84	20.5	24.0
	MIDDLE FORK ROCK CREEK					
3320	Philipsburg (near)	May-Sept	65.4	87		75.6
		May-July	58.9	87		67.6
	BLACKFOOT RIVER					
3400	Bonner (near)	May-Sept	772	88	914	879
		May-July	687	88	816	783
		May-June	566	88	701	655
	CLARK FORK RIVER					
3404	Milltown (above)(14)	May-Sept	583	83	622	698
		May-July	500	83	520	600
		May-June	410	83	442	492

(14) Difference in observed flow, Clark Fork above Missoula & Blackfoot at Bonner.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3250	Georgetown Lake	31.0	24.0	20.9	21.2

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED IV

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
13C16	Ambrose	6475	4/29	33	12.9	9.0	-
13C13	Black Pine	7100	4/30	37	14.4	9.0	-
12C5	Chessman Reservoir	6200	4/26	5	1.8	0.0	2.6
13C11	Fred Burr Pass	8000	4/29	74	29.8	22.6	-
13C4	Intergaard	6450	4/29	25	8.1	-	-
13C8	Lubrecht Forest #6	4040	5/1	0	0.0	0.0	0.1*
12D1	Pipestone Pass	7200	5/1	23	6.4	1.1	3.9*
13C12	Red Lion	7000	4/29	54	20.2	13.8	-
13C3	Skalkaho Summit	7259	4/30	63	25.0	24.7	25.8*
13C2	Slide Rock Mountain	7100	5/1	44	16.6	13.1	14.0*
12C1	Stemple Pass	6900	4/29	26	8.1	7.3	8.7
13C7	Storm Lake	7780	4/29	48	17.3	11.2	16.3*
12C2	Tenmile, Lower	6250	4/26	20	5.9	0.8	3.6
12C3	Tenmile, Middle	6800	4/25	43	13.1	6.6	9.0
12C4	Tenmile, Upper	8000	4/25	54	17.2	10.7	12.7

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
			DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
NO.	NAME	ELEVATION						
13C15M	Georgetown Lake	6450	48	8.3	5/1	4.1	8.2	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

BITTERROOT RIVER BASIN

MONTANA

AS OF:
MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook for the coming irrigation season has improved somewhat during the past month. Precipitation during April and cool temperatures that delayed the mountain snow melt have increased the snow pack at higher elevations.

Early season irrigation water should be adequate but late season shortages will occur unless summer temperatures are below normal and precipitation is above average.

Streamflow forecasts vary from 65 percent average on the lower reaches of the Bitterroot to 91 percent average on Blodgett Creek. For all streams in the Bitterroot drainage, flow will be less than last year.

Snow surveys made near the first of May indicate the mountain snow pack is 94 percent of last year and 83 percent of average. Even though there was little melting of high elevation snow, and many of the snow courses showed an increase in water during the month, May 1 water contents are still considerably lower than the April 1 average.

Reservoir storage is above average and above last year in Como Reservoir.

Report Prepared By:

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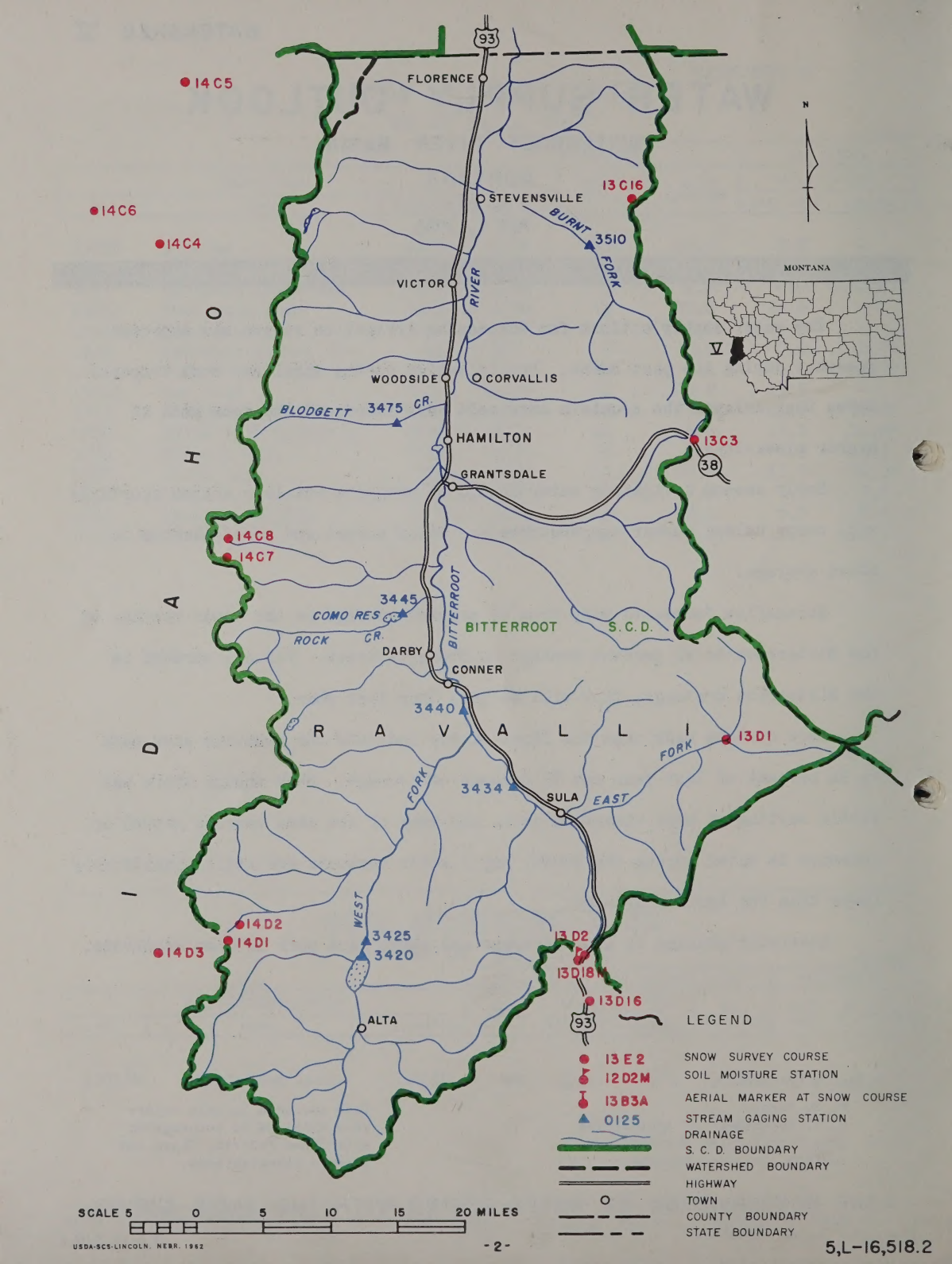
Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA SCS-LINCOLN, NEBR. 1962

5,L-16,518.1


93
FLORENCE
14C5
14C6
14C4
STEVENSVILLE
13C16
BURNT FORK
3510
VICTOR
RIVER
MONTANA
WOODSIDE
CORVALLIS
BLODGETT CR.
3475
HAMILTON
13C3
38
GRANTSDALE
14C8
14C7
3445
COMO RES
ROCK CR.
BITTERROOT
BITTERROOT S.C.D.
DARBY
CONNER
3440
I D A H O
R A V A L L I
13D1
FORK
3434
SULA
EAST FORK
WEST FORK
14D2
14D1
14D3
3425
3420
13D2
13D18M
13D16
ALTA
93
N
LEGEND
13E2 SNOW SURVEY COURSE
12D2M SOIL MOISTURE STATION
13B3A AERIAL MARKER AT SNOW COURSE
0125 STREAM GAGING STATION
DRAINAGE
S. C. D. BOUNDARY
WATERSHED BOUNDARY
HIGHWAY
TOWN
COUNTY BOUNDARY
STATE BOUNDARY
SCALE 5 0 5 10 15 20 MILES
USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,518.2

WATER SUPPLY FORECASTS

WATERSHED V

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	WEST FORK BITTERROOT RIVER					
3425	Conner (near)(15)	May-Sept	115	75	132	153
		May-July	106	75	120	141
	BITTERROOT RIVER					
3440	Darby (near)	May-Sept	365	70	452	519
		May-July	336	70	415	479
		May-June	287	70	363	409
3528	Missoula (near)(16)	May-Sept	889	65	1212	1379
		May-July	830	65	1114	1272
		May-June	695	65	967	1066
	BLODGETT CREEK					
3475	Corvallis (near)	May-Sept	38.0	91		41.9
		May-July	35.9	91		39.6

(15) Corrected for storage in Painted Rocks Reservoir.
(16) Difference in observed flow, Clark Fork above and below Missoula.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
3445	Como	34.9	27.8	24.0	16.5

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED V

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
13C16	Ambrose	6475	4/29	33	12.9	9.0	-
13D2	Gibbons Pass	7100	5/1	56	20.0	16.2	23.0
14C5	Lolo Pass	5230	4/29	45	19.6	33.7	29.7*
14C7	Lost Horse	5940	4/26	61	23.8	29.8	-
14D2	Nez Perce Camp	5580	5/1	24	7.8	5.6	8.3*
14D1	Nez Perce Pass	6575	5/1	30	9.6	6.8	12.6
13C3	Skalkaho Summit	7259	4/30	63	25.0	24.7	25.8*
14C8	Twin Lakes	6510	4/26	88	36.6	43.7	-

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
			DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
NO.	NAME	ELEVATION						
13D18M	Gibbons Pass	7100	48	7.1	5/1	7.0	-	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

MARIAS, TETON, & SUN RIVER BASINS

MONTANA

AS OF:
MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook for the coming irrigation season has improved somewhat during the past month. Precipitation during April and cool temperatures that have delayed the mountain snow melt have increased the snow pack at higher elevations.

Streamflow is forecast to be about 25 percent below average and less than last year on the Sun River drainages. On the Marias River, streamflow is forecast to be 58 percent of average and about the same as last year for the May-September period.

Snow surveys made near the first of May indicate the water stored in the snow is 83 percent of last year and 72 percent average.

Reservoir storage is slightly below average and generally less than a year ago.

Report Prepared By:

P. E. Farnes
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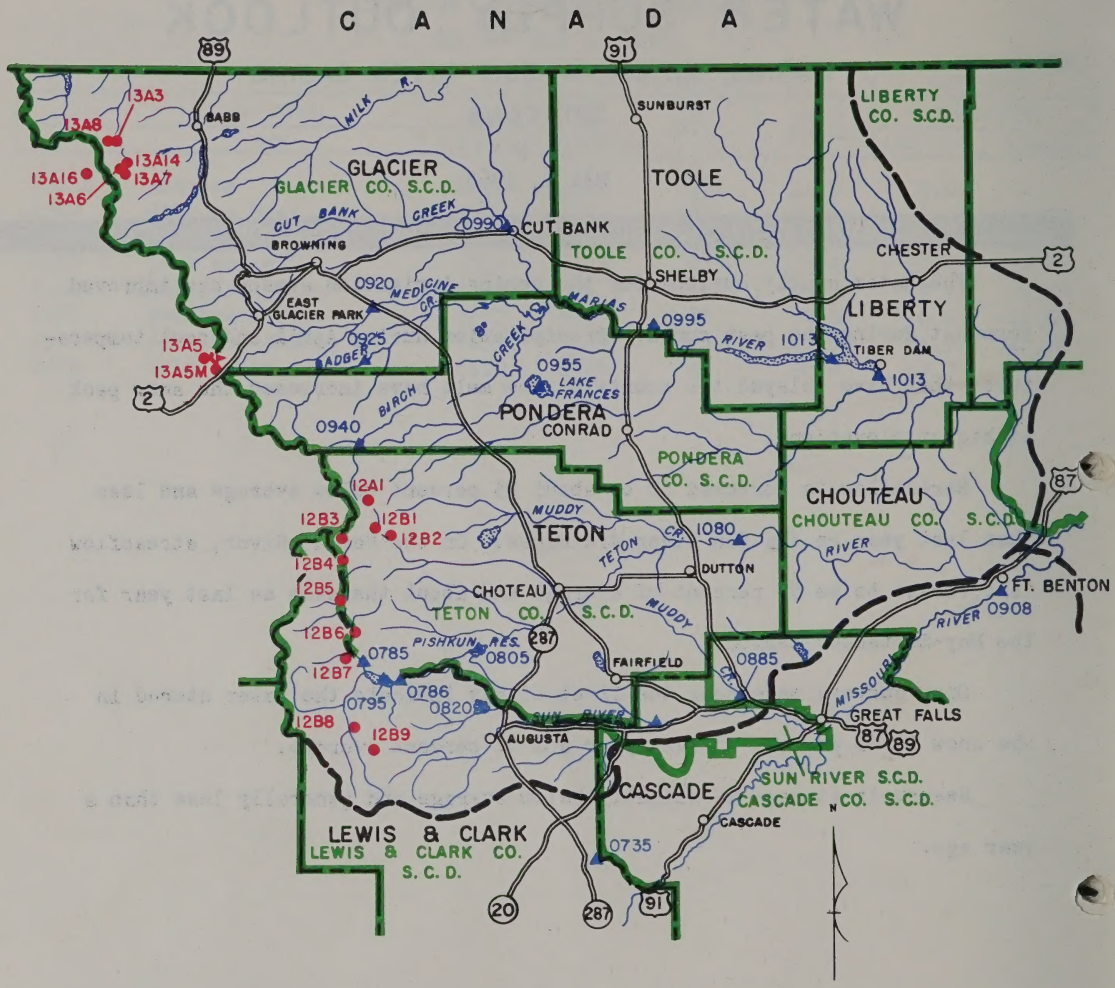
Soil Conservation Service
Box 855, Bozeman, Montana

Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

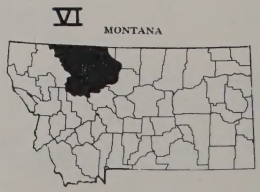
USDA-SCS-LINCOLN NEBR 1961

5,L-16,502.1



LEGEND

13 E 2	SNOW SURVEY COURSE
12D2M	SOIL MOISTURE STATION
13B3A	AERIAL MARKER AT SNOW COURSE
0125	STREAM GAGING STATION
	DRAINAGE
	S. C. D. BOUNDARY
	WATERSHED BOUNDARY
	HIGHWAY
O	TOWN
	COUNTY BOUNDARY
	STATE BOUNDARY



SCALE 10 0 10 20 30 40 MILES

5,L-16,502.2

USDA-SCS-LINCOLN, NEBR. 1962

WATER SUPPLY FORECASTS

WATERSHED VI

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	NORTH FORK SUN RIVER					
0785	Augusta (near)	May-Sept	173	77	201	225
		May-July	159	77	184	207
	SUN RIVER					
0786	Gibson Dam (at)(10)	May-Sept	411	75	554	551
		May-July	377	75	508	501
	MISSOURI RIVER					
0908	Fort Benton (at)(5)	May-Sept	2306	74	2888	3098
		May-July	1910	74	2323	2575
	MARIAS RIVER					
0995	Shelby (near)	May-Sept	335	58	332	581
		May-July	303	58	304	527

(5) Corrected for storage in Canyon Ferry Reservoir.
(10) Corrected for storage in Gibson Reservoir and diversions.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0795	Gibson	105.0	55.7	74.4	70.6
0805	Pishkun	32.0	20.8	25.6	20.7
0820	Willow Creek	32.3	27.8	14.2	21.1
0940	Swift	30.0	18.6	24.5	27.3
0955	Lake Francis	112.0	67.0	82.5	99.9
1013	Tiber	1313.0	647.0	647.6	656.9

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED VI

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
12B7	Goat Mountain	7000	4/30	19	6.0	9.3	9.2*
13A3	Iceberg Lake #3	5600	5/1	54	23.6	22.8	27.1
13A14	Josephine Lower #9	4900	4/30	23	8.8	15.2	17.1*
13A5	Marias Pass	5250	4/29	25	9.7	14.7	15.7
13A7	Mount Allen #7	5700	4/30	84	34.8	40.4	47.3
13A6	Piegan Pass #6	5500	4/30	66	28.4	34.7	38.4
13A8	Ptarmigan #8	5800	5/1	72	27.6	30.7	37.8

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
13A5M	Marias Pass	5250	54	6.5	4/28	6.2	6.1	6.0

NOTE: ALL AVERAGES BASED ON 1943–1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

MISSOURI RIVER (MAIN STEM) BASIN

MONTANA

AS OF:
MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook for the coming irrigation season has improved during the past month. Precipitation during April and cool temperatures that have delayed the mountain snow melt have increased the snow pack at higher elevations.

Streamflow in the Missouri River is forecast to be about 25 percent less than the 1943-57 average for the next five months. Tributaries to the Missouri River are expected to produce less water than last year and 70 to 85 percent average flow for the May through September period.

Snow surveys made near the first of May show the mountain snow pack is 156 percent of last year and 111 percent average. These percentages reflect the lack of snow melt this year compared to the high snow melt that occurred during April, 1962.

Reservoir storage in Smith River Reservoir is above average and near capacity.

Report Prepared By:

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THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

5,L-16,400.1

LEGEND
13E2 SNOW SURVEY COURSE
12D2M SOIL MOISTURE STATION
13B3A AERIAL MARKER AT SNOW COURSE
0125 STREAM GAGING STATION
DRAINAGE
S. C. D. BOUNDARY
WATERSHED BOUNDARY
HIGHWAY
TOWN
COUNTY BOUNDARY
STATE BOUNDARY
CHOUTEAU
FORT BENTON
0908
CHOUTEAU COUNTY S. C. D.
RIVER
BELT
GREAT FALLS
0885
SUN RIVER
SUN RIVER S.C.D.
LEWIS AND CLARK
DEARBORN
CASCADE COUNTY S. C. D.
CASCADE
ARMINGTON
0735
MISSOURI
0775
0905
CR.
JUDITH BASIN
JUDITH BASIN COUNTY S. C. D.
WOLF CREEK
HAINS
LEWIS AND CLARK COUNTY S. C. D.
12C1
NEIHART
10C1
SHEEP CR.
0770
10C6
MEAGHER S.C.D.
MEAGHER
SMITH R. RES.
HELENA
0585
RIVER
WHITE SULPHUR SPRINGS
10C2
10C7
0615
12C2
12C3
12C4
12C5
JEFFERSON CITY
BROADWATER
TOWNSEND
BROADWATER COUNTY S. C. D.
BOULDER
0330
12C7
TOSTON
0545
JEFFERSON
JEFFERSON VALLEY S. C. D.
MONTANA
VII
THREE RIVERS S. C. D.
SCALE 10 0 10 20 30 40 MILES
USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,400.2

WATER SUPPLY FORECASTS

WATERSHED VII

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MISSOURI RIVER					
0545	Toston (at)(3)	May-Sept	1564	78	1924	2006
		May-July	1324	78	1582	1693
0908	Fort Benton (at)(5)	May-Sept	2306	74	2888	3098
		May-July	1910	74	2323	2575
	PRICKLY PEAR CREEK					
0615	Clancy (near)	May-Sept	17.0	82	20.1	20.7
		May-July	14.5	82	17.1	17.6
	SUN RIVER					
0786	Gibson Dam (at)(10)	May-Sept	411	75	554	551
		May-July	377	75	508	501

(3) Corrected for storage in Hebgen and Ennis Lakes.
(5) Corrected for storage in Canyon Ferry Reservoir.
(10) Corrected for storage in Gibson Reservoir and diversions.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0585	Canyon Ferry	2043.0	1985.0	1419.0	1628.0
0645	Lake Helena	10.4	9.4	8.4	6.1
0650	Hauser Lk. + Lk. Helena	61.9	59.0	56.2	46.9
0660	Holter Lake	81.9	59.1	74.4	57.1
0750	Smith River	10.7	10.1	5.2	8.2

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
12C5	Chessman Reservoir	6200	4/26	5	1.8	0.0	2.6
10C1	Kings Hill	7500	4/29	35	10.4	10.9	14.1*
12C1	Stemple Pass	6900	4/29	26	8.1	7.3	8.7
12C2	Tenmile, Lower	6250	4/26	20	5.9	0.8	3.6
12C3	Tenmile, Middle	6800	4/25	43	13.1	6.6	9.0
12C4	Tenmile, Upper	8000	4/25	54	17.2	10.7	12.7

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE

WATER SUPPLY OUTLOOK

JEFFERSON RIVER AND TRIBUTARY BASINS

MONTANA

AS OF:

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook has improved during the past month. Precipitation during April and cool temperatures that have delayed the mountain snow melt have increased the snow pack at higher elevations.

Streamflow for the next five months is expected to be slightly more than last year on the Big Hole and Boulder River drainages. A shortage of irrigation water is still expected on the Red Rock drainage, but conditions appear to be less critical than they did last month.

Snow surveys made near the first of May show an increase in water content during the past month at almost all snow courses. The May 1 snow pack is 99 percent of last year in the Red Rock-Beaverhead drainage and 92 percent average. In the Big Hole-Boulder drainage, the pack is 172 percent of last year and 112 percent average. These percentages reflect the lack of snow melt and above average precipitation this year compared to the high snow melt and below average precipitation that occurred during April, 1962.

Reservoir storage is below average in Lima and slightly above average in Ruby.

Report Prepared By:

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Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,394.1

LEGEND
13E2 SNOW SURVEY COURSE
12D2M SOIL MOISTURE STATION
13B3A AERIAL MARKER AT SNOW COURSE
0125 STREAM GAGING STATION
DRAINAGE
S. C. D. BOUNDARY
WATERSHED BOUNDARY
HIGHWAY
TOWN
COUNTY BOUNDARY
STATE BOUNDARY
LEWIS & CLARK CO.
12C2
12C3
12C5
12C4
S. C. D.
91
BASIN
BOULDER
12C6
0330
12C7
JEFFERSON
13C7
DEER LODGE
10S
BUTTE
JEFFERSON VALLEY
S. C. D.
THREE RIVERS
S. C. D.
MILE HIGH
S. C. D.
SILVER BOW
12D1
WHITEHALL
0345
10S
BIG HOLE RIVER
13D21
DIVIDE
13D2
13D18M
13D16
MELROSE
13D20
WISE RIVER
13D15
JEFFERSON RIVER
TWIN BRIDGES
287
0255
GLEN
41
SHERIDAN
MADISON S.C.D.
RUBY RIVER
ENNIS
34
VIRGINIA CITY
BEAVERHEAD
BEAVERHEAD S. C. D.
13D8
13D9
13D10
13D19
DILLON
RUBY RES.
0200
RUBY VALLEY
0195
S. C. D.
0160
12D4
11D7
11D6
11D8
PRAIRIE CR.
13E1
13E2
BEAVERHEAD RIVER
0175
RUBY RIVER
MADISON
ARMSTEAD
12E6
12E7
RED ROCK CREEK
0125
LIMA
0120
0110
11E13M
11E3
11E4
12E1
91
12E4
12E3
11E11
11E12
12E5
IDAHO
N
MONTANA
VIII
SCALE 10 0 10 20 30 40 MILES
-2-
5,L-16,394.2
USDA-SCS-LINCOLN NEBR. 1962

WATER SUPPLY FORECASTS

WATERSHED VIII

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	RED ROCK RIVER					
0110	Kennedy Ranch (at)	May-Sept	30.6	56	68.5	54.5
		May-July	27.3	56	59.5	48.7
0125	Monida (near)(1)	May-Sept	33.1	53	70.8	62.3
		May-July	30.9	53	62.4	58.1
	BIG HOLE RIVER					
0255	Melrose (near)	May-Sept	570	85	549	668
		May-July	521	85	497	611
	BOULDER RIVER					
0330	Boulder (near)	May-Sept	63.8	92	55.6	69.4
		May-July	61.6	93	51.9	66.0
	JEFFERSON RIVER					
0345	Sappington (at)	May-Sept	709	78	782	913
		May-July	622	78	658	798

(1) Corrected for storage in Lima Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0120	Lima	84.0	44.5	53.3	55.9
0205	Ruby	38.8	32.4	38.8	27.0

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED VIII

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE NO.	NAME	ELEVATION	CURRENT DATA: DATE OF SURVEY	CURRENT DATA: SNOW DEPTH	CURRENT DATA: WATER CONTENT	PAST RECORD: WATER CONTENT: LAST YEAR	PAST RECORD: WATER CONTENT: AVERAGE
13D20	Abundance Lake	8800	4/25	66	19.8	-	-
11D7	Call Road	8050	4/25	42	12.5	-	-
13C5	Chessman Reservoir	6200	4/26	5	1.8	0.0	2.6
11D8	Clover Meadow	8600	4/25	52	15.4	-	-
11D6	Crockett Lake	8400	4/25	41	13.2	-	-
13D19	Darkhorse Lake	8600	4/25	74	22.5	-	-
12E7	Divide	7900	4/25	31	9.3	-	-
13D15	Elk Horn Springs	7800	4/29	30	8.0	5.5	8.7*
13D21	Foolhen	8500	4/25	61	17.7	-	-
13D2	Gibbons Pass	7100	5/1	56	20.0	16.2	23.0
11E4	Lakeview Canyon	6930	4/26	27	8.4	9.6	9.6*
11E3	Lakeview Ridge	7400	4/26	24	7.4	6.4	7.6*
12E6	Notch	8500	4/25	46	13.5	-	-
12D1	Pipestone Pass	7200	5/1	23	6.4	1.1	3.9*
13C7	Storm Lake	7780	4/29	48	17.3	11.2	16.3*
12C2	Tenmile, Lower	6250	4/26	20	5.9	0.8	3.6
12C3	Tenmile, Middle	6800	4/25	43	13.1	6.6	9.0
12C4	Tenmile, Upper	8000	4/25	54	17.2	10.7	12.7
12E1	White Pine Ridge	8850	4/25	25	7.8	-	-

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION NO.	NAME	ELEVATION	SOIL PROFILE: DEPTH	SOIL PROFILE: FIELD CAPACITY	CURRENT DATA: DATE OF SURVEY	CURRENT DATA: SOIL MOISTURE	PAST RECORD: LAST YEAR	PAST RECORD: **AVERAGE
13D18M	Gibbons Pass	7100	48	7.1	5/1	7.0	-	-
11E13M	Lakeview	6700	48	15.3	4/30	14.4	-	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

MADISON, & GALLATIN RIVER BASINS

MONTANA

AS OF:

MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook has improved during the past month. Precipitation during April and cool temperatures that have delayed the mountain snow melt have increased the snow pack at higher elevations.

Streamflow for the next five months is forecast to be 25 to 30 percent below average on the Madison drainage. Streamflow on the Gallatin River should be about 5 percent below average. Above average flow can be expected from Hyalite Creek.

Snow surveys made near the first of May show an increase in water content at the higher elevation courses during the past month. In the Madison drainage the snow pack is 117 percent of last year and 108 percent average. On the Gallatin, the snow pack is 111 percent of last year and 106 percent average. These percentages reflect the lack of snow melt and above average precipitation this year compared to the high snow melt and below average precipitation that occurred during April, 1962.

Report Prepared By:

P. E. Farnes
U. S. Department of Agriculture
Soil Conservation Service
Box 855, Bozeman, Montana

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THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,521.1

TOWNSEND
MEAGHER S. C. D.
MEAGHER
BROADWATER CO. S. C. D.
RINGLING
BROADWATER
TOSTON
0545
JEFFERSON
PARK S. C. D.
GALLATIN
10D10
10D11M
PARK
0525
THREE FORKS
MANHATTAN
SAPPINGTON
THREE RIVERS S. C. D.
BELGRADE
0345
0480
BOZEMAN
11D2M
11D4M
NORRIS
11D3
10D1
0500
0495
0410
0435
10D3
0405
ENNIS LAKE
GALLATIN VALLEY
10D4
ENNIS
11D5
KARSTS KAMP S. C. D.
VIRGINIA CITY
MADISON CAMERON S. C. D.
MADISON
11D7
11D6
RUBY VALLEY S. C. D.
11D8
10D5
WYOMING
11E5
11E6
0385
0380
HEBGEN LAKE
11E7
WEST YELLOWSTONE
10E2
10E3
BEAVERHEAD
BEAVERHEAD S. C. D.
11E8
0375
11E9
10E7
SCALE 10 0 10 20 MILES
N
MONTANA
IX
LEGEND
13E2 SNOW SURVEY COURSE
12D2M SOIL MOISTURE STATION
13B3A AERIAL MARKER AT SNOW COURSE
0125 STREAM GAGING STATION
DRAINAGE
S. C. D. BOUNDARY
WATERSHED BOUNDARY
HIGHWAY
TOWN
COUNTY BOUNDARY
STATE BOUNDARY

WATER SUPPLY FORECASTS

WATERSHED IX

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	MADISON RIVER					
0375	West Yellowstone (near)	May-Sept	144	77	196	187
		May-July	105	77	144	136
0385	Grayling (near)(2)	May-Sept	275	71	420	389
		May-July	212	71	310	298
0410	McAllister (near)(3)	May-Sept	496	75	710	659
		May-July	388	75	557	516
	GALLATIN RIVER					
0435	Gateway (near)	May-Sept	407	94	523	431
		May-July	342	93	443	367
	HYALITE CREEK					
0500	Ranger Station (at)(4)	May-Sept	35.5	107	34.9	33.2
		May-July	30.2	107	28.8	28.2
	GALLATIN RIVER					
0525	Logan (at)	May-Sept	380	89	518	426
		May-July	318	89	426	356
	MISSOURI RIVER					
0545	Toston (at)(3)	May-Sept	1564	78	1924	2006
		May-July	1324	78	1582	1693

(2) Corrected for storage in Hebgen Lake.
(3) Corrected for storage in Hebgen and Ennis Lakes.
(4) Corrected for storage in Middle Creek Reservoir.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
0380	Hebgen Lake	384.8	308.2	154.3	212.1
0405	Ennis Lake	41.0	39.0	38.7	34.4
0500	Middle Creek	8.0	5.3	4.4	4.7

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED IX

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
11D9	Bear Basin	8150	5/2	53	20.8	-	-
11E9	Big Springs	6500	4/29	29	10.5	-	-
11D7	Call Road	8050	4/25	42	12.5	-	-
10E3	Canyon	7750	4/1	41	14.5	15.5	12.6*
11D8	Clover Meadow	8600	4/25	52	15.4	-	-
11D6	Crockett Lake	8400	4/25	41	13.2	-	-
10D4	Devil's Slide	8100	4/27	66	25.2	25.0	23.4
11E5	Hebgen Dam	6550	4/29	15	5.1	2.4	3.9
10D3	Hood Meadow	6600	4/27	25	9.3	4.8	5.5
11E10	Island Park	6315	4/29	23	8.1	-	-
11D10	Little Park	7400	5/2	37	13.6	-	-
10D10	Sacajawea	6550	5/3	27	10.6	6.0	-
11E6	Twenty-One Mile	7150	4/28	34	11.2	11.4	14.5
11E8	Valley View	6500	4/29	34	11.3	-	-
11E7	West Yellowstone	6700	4/29	12	4.6	5.0	5.6

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
			DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
NO.	NAME	ELEVATION						
10D11M	Battle Ridge	6020	48	15.4	4/30	17.2	14.6	-
11D2M	College Site	4856	54	14.5	4/30	13.4	11.9	11.9
10D4M	Red Bluff	4800	40	4.7	5/5	2.4	2.0	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

JUDITH, & MUSSELSHELL RIVER BASINS

MONTANA

AS OF:
MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook for the coming irrigation season remains good. Precipitation during April and cool temperatures that have delayed snow melt have increased the snow pack at higher elevations.

Streamflow during the next five months is forecast to be near average on the South Fork Musselshell. Average or above average flows can be expected from other streams in the Musselshell and Judith drainages.

Kings Hill was the only snow course measured in this area. The May 1 water content at this course is slightly less than a year ago and about 25 percent below average.

Storage in irrigation reservoirs is above average and more than a year ago.

Report Prepared By:

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Soil Conservation Service
Box 855, Bozeman, Montana

Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,516.1

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,516.2

WATER SUPPLY FORECASTS

WATERSHED X

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	SOUTH FORK MUSSELSHELL R.					
1185	Martinsdale (above)	May-Sept	45.5	98	44.3	46.3
		May-July	43.2	98	40.5	44.2
	MISSOURI RIVER					
1150	Zortman (near)(6)	May-Sept	2960	71	3631	4140
		May-July	2480	71	2998	3477

(6) Corrected for storage in Canyon Ferry and Tiber Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
1105	Ackley Lake	5.8		1.8	3.9
1165	Durand	7.0	7.0	3.4	6.2
1190	Martinsdale	23.1	12.4	7.6	11.4
1225	Deadman's Basin	72.2	60.8	15.0	49.4

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED X

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
						WATER CONTENT	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE
10C1	Kings Hill	7500	4/29	35	10.4	10.9	14.1*

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
10C4M	Shields River	5850	48	17.8	4/30	17.1	18.2	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

UPPER YELLOWSTONE RIVER BASIN

MONTANA

AS OF:
MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook in the Upper Yellowstone drainage has improved during the past month. Precipitation during April and cool temperatures that have delayed mountain snow melt have increased the snow pack at higher elevations.

Streamflow for the next five months is forecast to be 10 to 25 percent below average on streams tributary to the Yellowstone River.

Snow surveys made near the first of May show the water stored in the mountain snow pack is 136 percent of last year and 111 percent average. These percentages reflect the lack of snow melt and above average precipitation this year as compared to the high snow melt and below average precipitation that occurred during April, 1962.

Report Prepared By:

P. E. Farnes
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Soil Conservation Service
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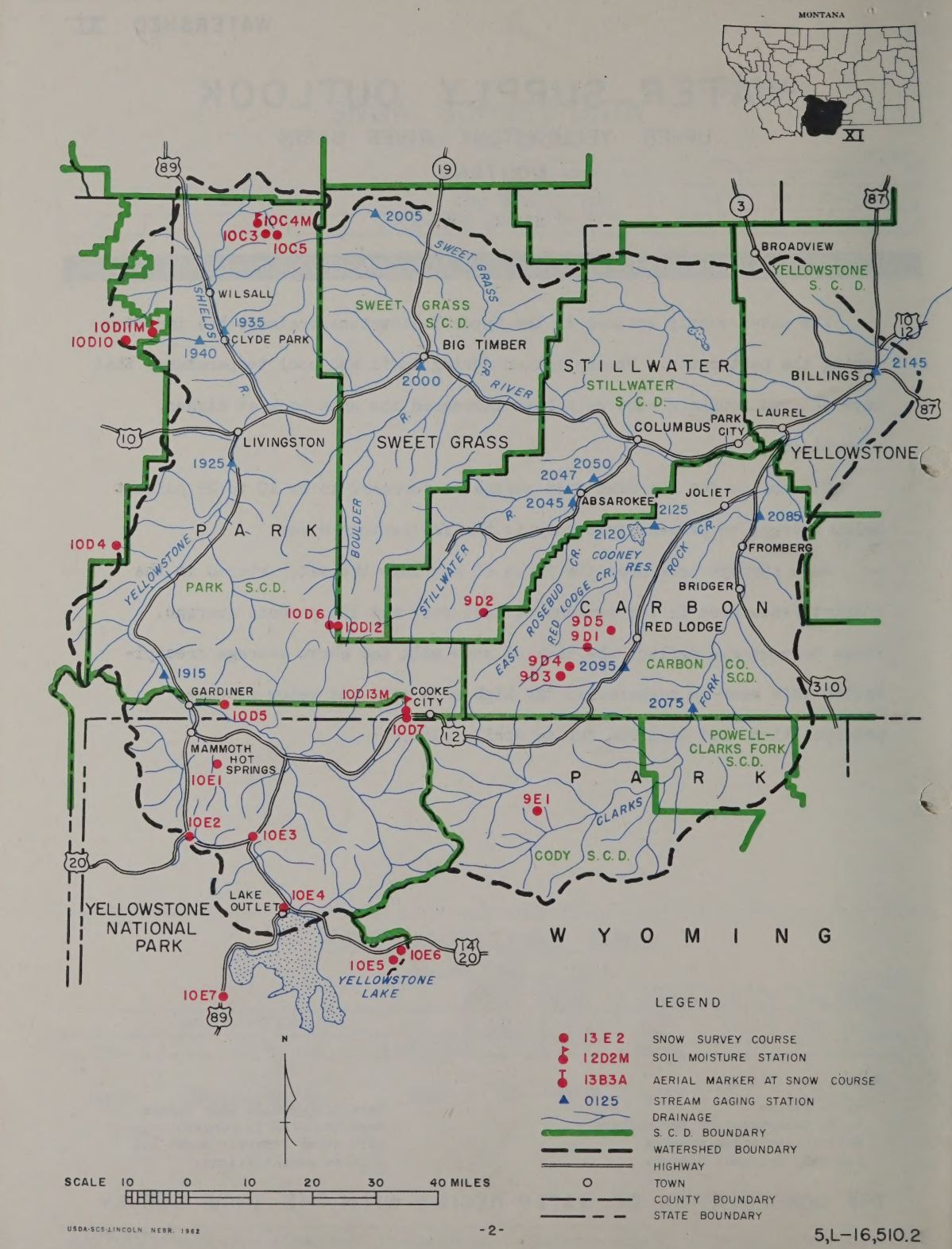
Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR. 1962

5,L-16,510.1


MONTANA
XI
WYOMING
10C4M
10C3
10C5
10D11M
10D10
10D4
10D6
10D12
10D13M
10D5
10D7
10E1
10E2
10E3
10E4
10E5
10E6
10E7
9D2
9D5
9D1
9D4
9D3
9E1
2005
2000
1935
1940
1925
1915
2050
2047
2045
2120
2125
2085
2095
2075
2145
SWEET GRASS S.C.D.
STILLWATER S.C.D.
YELLOWSTONE S.C.D.
PARK S.C.D.
CARBON CO. S.C.D.
POWELL-CLARKS FORK S.C.D.
CODY S.C.D.
SWEET GRASS
STILLWATER
CARBON
PARK
YELLOWSTONE
BIG TIMBER
COLUMBUS
PARK CITY
LAUREL
BILLINGS
BROADVIEW
LIVINGSTON
WILSALL
CLYDE PARK
ABSAROKEE
JOLIET
FROMBERG
BRIDGER
RED LODGE
GARDINER
COOKE CITY
MAMMOTH HOT SPRINGS
LAKE OUTLET
YELLOWSTONE NATIONAL PARK
YELLOWSTONE LAKE
COONEY RES.
SWEET GRASS CR.
STILLWATER R.
BOULDER R.
YELLOWSTONE R.
SHIELDS R.
CR. RIVER
ROCK CR.
RED LODGE CR.
ROSEBUD CR.
EAST FORK
CLARKS
SCALE 10 0 10 20 30 40 MILES
N
LEGEND
13 E 2 SNOW SURVEY COURSE
12D2M SOIL MOISTURE STATION
13B3A AERIAL MARKER AT SNOW COURSE
0125 STREAM GAGING STATION
DRAINAGE
S. C. D. BOUNDARY
WATERSHED BOUNDARY
HIGHWAY
TOWN
COUNTY BOUNDARY
STATE BOUNDARY
USDA-SCS-LINCOLN, NEBR. 1962
-2-
5,L-16,510.2

WATER SUPPLY FORECASTS

WATERSHED XI

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
	YELLOWSTONE RIVER					
1915	Corwin Springs (at)	May-Sept	1480	79	2119	1888
		May-July	1228	79	1757	1557
1925	Livingston (near)	May-Sept	1676	79	2386	2136
		May-July	1378	79	1973	174
2145	Billings (at)	May-Sept	3033	76	4218	3998
		May-July	2563	76	3494	3393
3090	Miles City (at)(12)	May-Sept	4874	79	6441	6182
		May-July	4206	79	5497	5343
3295	Sidney (near)(12)	May-Sept	5080	80	7384	6362
		May-July	4340	80	6449	5430
	SHIELDS RIVER					
1935	Clyde Park (at)	May-Sept	83.8	90	65.1	92.5
		May-July	76.7	90	56.6	84.8
	STILLWATER RIVER					
2050	Absarokee (near)(11)	May-Sept	505	85	607	594
		May-July	422	85	488	497
	CLARKS FORK RIVER					
2075	Chance (at)	May-Sept	450	76	573	590
		May-July	400	76	510	525
2085	Edgar (at)	May-Sept	466	76	625	616
		May-July	412	76	532	540
	ROCK CREEK					
2095	Red Lodge (near)	May-Sept	96.0	88	103	109
		May-July	73.6	88	79.1	83.6

(11) Corrected for storage in Mystic Lake.
(12) Corrected for storage in Buffalo Bill and Boysen Reservoirs.

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
2040	Mystic Lake	20.8	3.8	1.4	3.3
2120	Cooney	27.5	21.8	15.1	14.7

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED XI

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
9D1	Camp Senia	7890	4/29	39	11.0	8.3	-
10E3	Canyon	7500	5/1	41	14.5	15.5	12.6*
10D4	Devil's Slide	8100	4/27	66	25.2	25.0	23.4
10E6	East Entrance	7000	4/30	22	7.2	0.0	4.9*
9D3	Gertrude Lake	9250	4/29	66	16.8	16.4	-
9D5	Grizzly Peak	8400	5/1	63	21.9	25.8	-
10D6	Independence	8000	4/30	50	17.6	15.2	-
10E4	Lake Camp #2	7850	4/30	22	5.5	9.9	8.7*
9E1	Lodgepole	8200	5/1	39	11.0	7.2	11.0*
10E1	Lupine Creek	7300	4/27	24	8.7	6.2	8.6*
10D12	Monument Peak	9000	4/30	70	25.0	26.0	-
10E2	Norris Basin	7500	4/29	31	10.9	5.2	6.3*
10D7	Northeast Entrance (Cooke City)	7400	4/30	22	7.2	3.8	6.6*
10D10	Sacajawea	6550	5/3	27	10.6	6.0	-
10E5	Sylvan Pass	7100	4/30	41	12.6	2.5	10.7*
9D4	Timberline Creek	8850	4/29	67	16.6	17.1	-

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
			DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
NO.	NAME	ELEVATION						
10D11M	Battle Ridge	6020	48	15.4	4/30	17.2	14.6	-
10D13M	Northeast Entrance	7350	48	9.4	4/30	7.5	-	-
10C4M	Shields River	5850	48	17.8	4/30	17.1	18.2	-

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD

WATER SUPPLY OUTLOOK

MILK RIVER BASIN
MONTANA

AS OF:
MAY 1, 1963

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

The water supply outlook for the coming irrigation season has improved somewhat during the past month but remains only fair to poor. The May-September streamflow at Eastern Crossing is forecast to be 144,000 acre-feet. Combined with Fresno Reservoir storage, this provides about 211,000 acre-feet of water available for irrigation. The 1943-57 combined storage and streamflow is 298,000 acre-feet. Water available for irrigation this year is about 71 percent of average and 88 percent of last year.

Snow surveys made near the first of May show the water stored in the mountain snow pack is 84 percent of last year and 73 percent average.

Reservoir storage is below average in Fresno and slightly above average in Nelson.

Report Prepared By:

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Data included in this report were obtained in cooperation with other Federal, State and private organizations.

THE CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY

USDA-SCS-LINCOLN, NEBR. 1962

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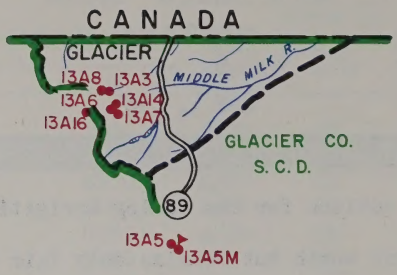
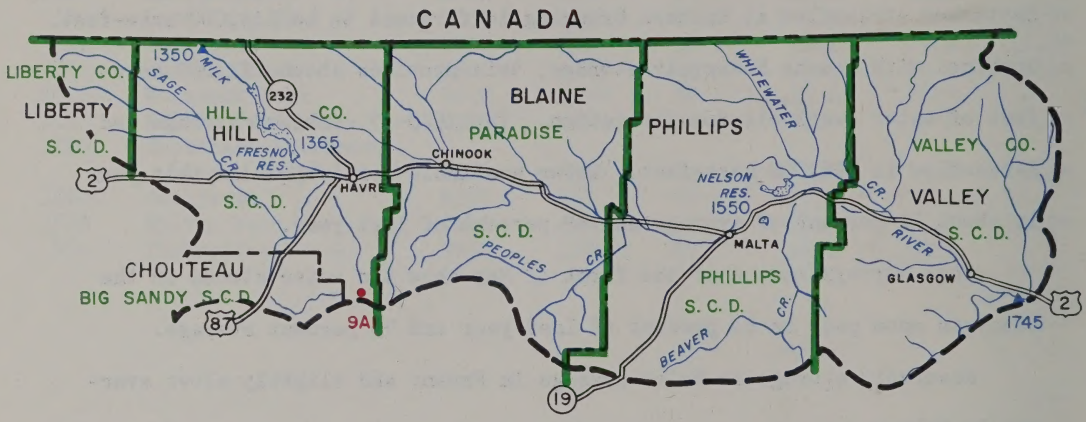
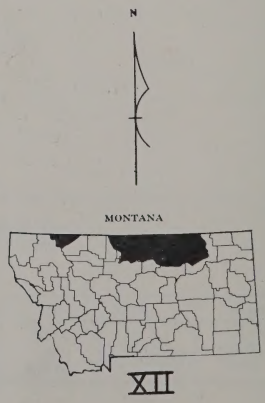




LEGEND

13E2	SNOW SURVEY COURSE
12D2M	SOIL MOISTURE STATION
13B3A	AERIAL MARKER AT SNOW COURSE
0125	STREAM GAGING STATION
	DRAINAGE
	S. C. D. BOUNDARY
	WATERSHED BOUNDARY
	HIGHWAY
O	TOWN
	COUNTY BOUNDARY
	STATE BOUNDARY



SCALE 10 0 10 20 30 40 50 MILES

WATER SUPPLY FORECASTS

WATERSHED XII

AS OF MAY 1, 1963

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	MEASURED FLOW	
					LAST YEAR*	AVERAGE
	MILK RIVER					
1350	Eastern Crossing (at)	May-Sept	144	74	171	195

*PROVISIONAL DATA FURNISHED BY U. S. GEOLOGICAL SURVEY

RESERVOIR STORAGE DATA

AS OF APRIL 30, 1963

(1000 Acre Feet)

NO.	RESERVOIR	USABLE CAPACITY	THIS YEAR	LAST YEAR	AVERAGE
1365	Fresno	127.2	67.5	69.4	103.0
1550	Nelson	66.8	40.6	19.4	37.1

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD)

WATERSHED XII

SNOW SURVEY DATA

AS OF MAY 1, 1963

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
NO.	NAME	ELEVATION				LAST YEAR	AVERAGE
13A3	Iceberg Lake #3	5600	5/1	54	23.6	22.8	27.1
13A14	Josephine Lower #9	4900	4/30	23	8.8	15.2	17.1*
13A5	Marias Pass	5250	4/29	25	9.7	14.7	15.7
13A7	Mount Allen #7	5700	4/30	84	34.8	40.4	47.3
13A6	Piegan Pass #6	5500	4/30	66	28.4	34.7	38.4
13A8	Ptarmigan #8	5800	5/1	72	27.6	30.7	37.8

SOIL MOISTURE DATA

AS OF MAY 1, 1963

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
			DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE
NO.	NAME	ELEVATION						
13A5M	Marias Pass	5250	54	6.5	4/28	6.2	6.1	6.0

NOTE: ALL AVERAGES BASED ON 1943-1957 (15 YEAR PERIOD). *ADJUSTED AVERAGE **AVERAGE FOR PERIOD OF RECORD